Studio Lighting

Lighting

Natural light

Sunlight/ strong contrast

Overcast/ soft

Twilight/ Moonlight/ low

Artificial light

Studio light (tungsten/ flash)

Flash (build-in/ flash gun)

Household lamps

Spotlight

Direction of light

Frontal light

Side-light/ shadows

45 degree light

Back light

Reflected light

Chiaroscuro (light/darkness)

Studio lighting

Studio lighting can be broken down into two categories, continuous and flash.

Continuous lights are also referred to as Tungsten light, and one type of these lights are called ‘redheads’

Flashlight lights have umbrellas, or a softbox can be attached to diffuse the light

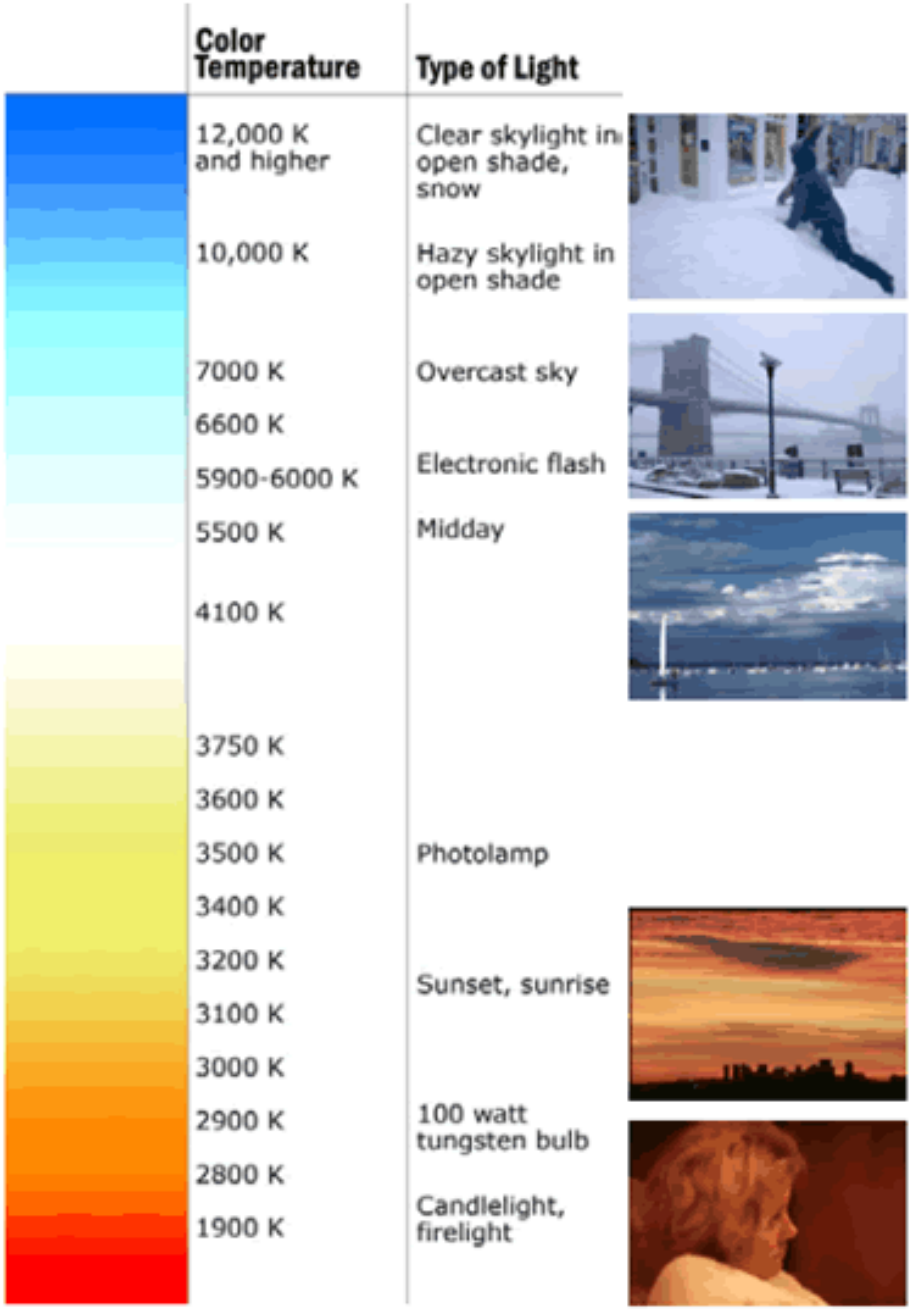
Continuous lighting

Although there are exceptions, most tungsten light designed specifically for photography produces light of a colour around 3200 - 3400 degree Kelvin, which is much warmer in colour (less blue) than flash.

Because the tungsten lights are creating a warmer orange colour you need to adjust your white balance for tungsten setting. Although they appear to be very bright, tungsten lights produce a very low level of actual light compared to studio flash.

White balance

Most light sources are not 100% pure white but have a certain "colour temperature", expressed in Kelvin. For instance, the midday sunlight will be much closer to white than the more yellow early morning or late afternoon sunlight. Normally our eyes compensate for lighting conditions with different colour temperatures. A digital camera needs to find a reference point which represents white. It will then calculate all the other colours based on this white point. For instance, if a halogen light illuminates a white wall, the wall will have a yellow cast, while in fact it should be white. So if the camera knows the wall is supposed to be white, it will then compensate all the other colours in the scene accordingly.



White balance

Digital cameras correct for different colour temperatures automatically. They have a built-in automatic white balance system that measures the colour temperature of light being reflected from the subject and then adjust red, green and blue components of the signal from the imaging chip before it is recorded, so that the picture looks normal. Most cameras also have manual white balance settings, allowing you to set the filtration that you want for creative effect or to correct for incorrect assumptions made by the automatic system.

White balance…cont

White-balance	Icon
As Shot	
Auto	AWB
Daylight	
Cloudy	
Shade	
Tungsten	
Fluorescent	
Flash	
Custom	

Automatic white balance – measures the colour temperature of the scene, and adds correction to provide a natural-looking scene

Use this manual setting for outdoor shots in fine weather when the main light source for the shot is the sun. Also use for flash.

Use this manual setting for shots taken in shade or on cloudy days. It will give warmer results than the sunny setting

Use this manual setting for shots when the main light source is normal household light bulbs, or when using tungsten light in the studio.

Use this manual setting for shots taken under strip lighting. Different settings may be provided for different types of tube

Use this manual setting for shots taken using flash on your camera. Try also this setting when you the flash system in the studio

Use to choose the white balance setting manually by taking a colour temperature reading from a white surface

Camera Data Icon Legend – White Balance

ISO and sensitivity

You can adjust the sensitivity of the digital chip by adjusting your ISO number. Increasing the ISO to a higher number will make the chip more sensitive to light and you can shoot in low light situations e.g indoors at sports event or concerts. However, increasing the sensitivity reduces image quality and produces a grainy surface. Most often you want to shoot using low ISO (80-100) numbers to maintain the best image quality, finest details and best colouration. But this is all depending on the lighting conditions you are photographing in as the ISO rating along with the shutter speed and aperture plays a vital part in how the exposure is calculated.

ISO and exposure

A photographer can choose an ISO rating that provides the range of shutter speeds or apertures that is suited to the subject matter in the prevailing lighting conditions. Changing the ISO increments works in much the same way as that of shutter speeds and apertures, e.g. by doubling the ISO speed from 100 to 200 you halves the exposure and going from 800 to 400 doubles the exposure

For example; if at ISO 100 you need an exposure of 1/30 sec at f/8, you could also use a setting of 1/60 sec at f/8 with ISO 200, and 1/125 sec at f/8 with ISO 400. You may want to choose a higher ISO in low light and thereby being able to use a faster shutter speed to avoid unwanted camera shake, however the grain structure is more visible. Alternatively choose a lower ISO number and use a tripod.

THE RIGHT FILM SPEED FOR THE JOB

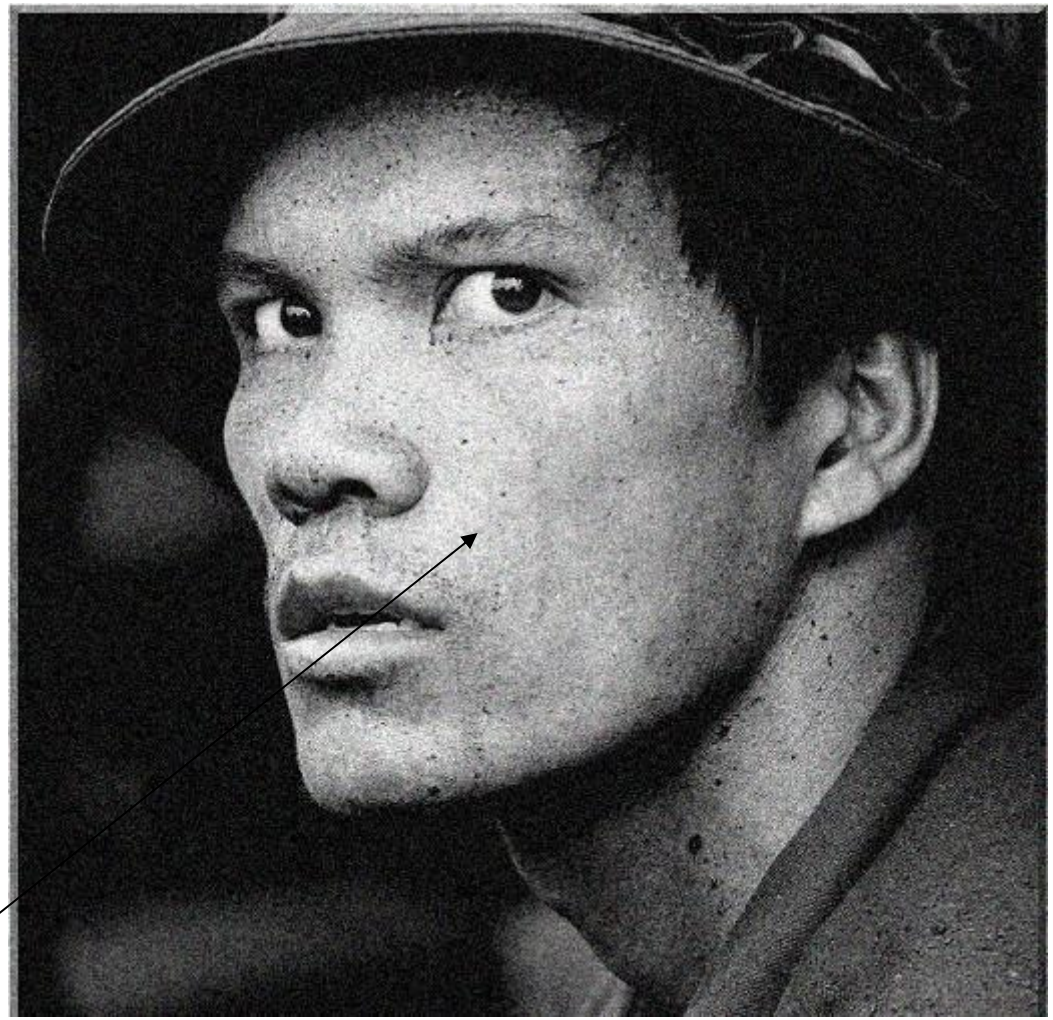
Speed	ISO rating	Grain	Typical uses
Slow	25–64	Fine grain	Where fine detail is essential: copying work, still life and studio photography, tripod work.
Medium	100–400	Medium grain	Handheld cameras in most situations where average daylight is available. General flash shots. Night photography where tripods and slow shutter speeds are required.
Fast	640–3200	Noticeable grain	Handheld photography in lowlight (*see pp.122–3*). When grainy quality is required.

Low ISO 80-100

Most landscape photographers use low ISO for high quality images with fine detail and best colour saturation. In these pictures the combination of a small aperture (f/16) and low ISO (100) gave a long exposure (5 sec) which gave a smooth effect to the moving water

Your choice of ISO determines the apertures and shutter speeds available, and knowing the effects made by altering all three factors are intrinsic to good technique

High ISO 800-3200



High ISO allows you to hand held your camera as well as allowing you to set fast shutter speeds to freeze moving subjects in low light. The picture quality diminishes but you can use this ‘grainy look’ creatively and make an artistic image

1600 ISO

ISO stands for International Standards Organization. It refers to the film/digital camera chip's sensitivity to light. The higher the number, the faster the film and the greater its sensitivity to light. A fast ISO (eg ISO 1600) requires less light than a slow ISO (eg 100) to produce a photographic image and is used mostly when photographs are being taken indoors or when there is limited available light. The 200 ISO setting is twice as sensitive to light as the 100 ISO and the 400 ISO is twice as sensitive as the 200 ISO.

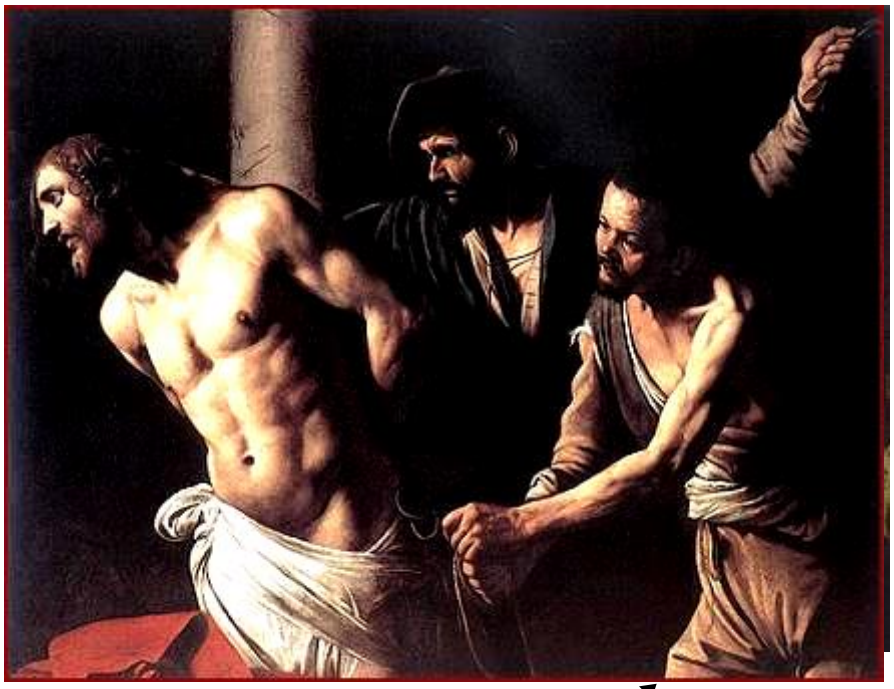
Films are covered with light sensitive emulsion which is formed of silver crystals. In order for a fast film to catch more light quicker than a slow film, the crystals are bigger. These crystals give the photograph a grainy or sharp texture

The slower the film (eg ISO100) the smaller the grain and the sharper the image. The colour is also more saturated on the slower ISOs.

The grainy texture is more noticeable when you blow-up the image up. I have done with a section of the photograph above.

Chiaroscuro

A visual element in art, chiaroscuro (Italian for *lightdark*) is defined as a bold contrast between light and dark) A certain amount of chiaroscuro is the effect of light modelling in painting where 3-dimensional volume is suggested by highlights and shadows. It first appeared in 15th century painting in Italy and Flanders (Holland), but true chiaroscuro developed during the 16th century, in Mannerism and in Baroque art.



Caravaggio

Rembrandt

Dark subjects were dramatically lighted by a shaft of light from a single constricted and often unseen source was a compositional device seen in the paintings of old masters such as Caravaggio and Rembrandt

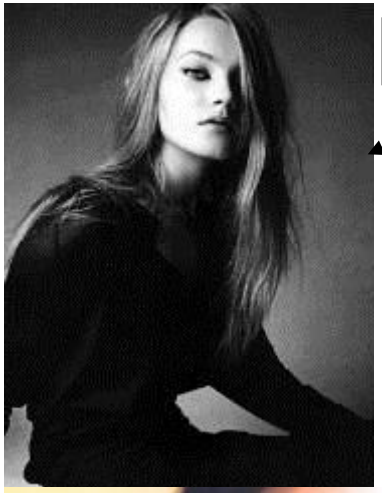
Chiaroscuro in film

Film noir (French for "black film"), is a cinematic term used primarily to describe stylish Hollywood crime dramas, particularly those that emphasize moral ambiguity and sexual motivation. Hollywood's classic film noir period is generally regarded as stretching from the early 1940s to the late 1950s. Film noir of this era is associated with a low-key black-and-white visual style that has roots in German Expressionist cinematography, while many of the prototypical stories and much of the attitude of classic noir derive from the hardboiled school of crime fiction that emerged in the United States during the Depression.

Film noir has sources not only in cinema but other artistic media as well. The low-key lighting schemes commonly linked with the classic mode are in the tradition of **chiaroscuro**.

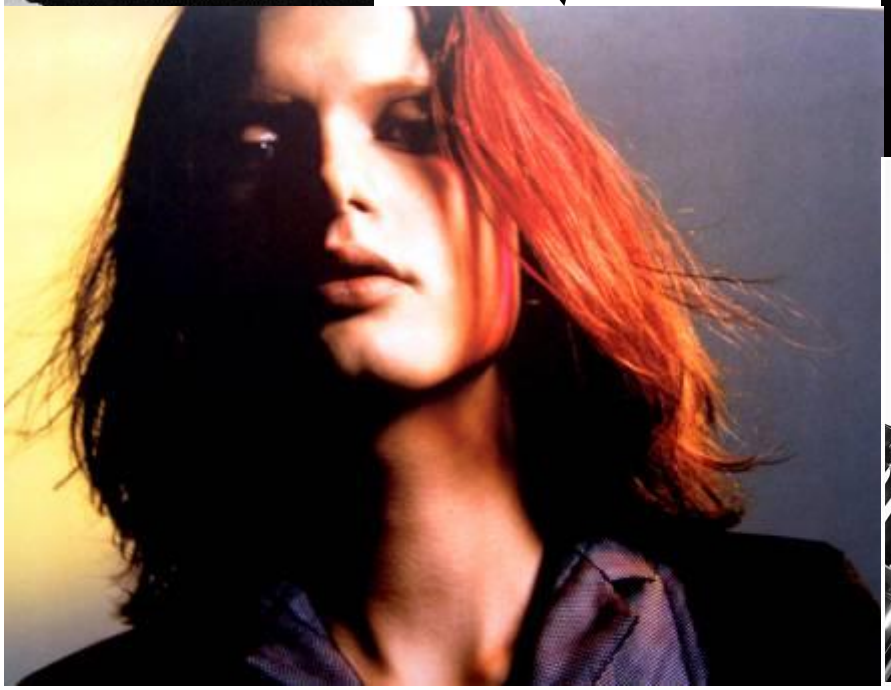
The Big Combo (1955)

Chiaroscuro in photography



Patrick Demarchelier

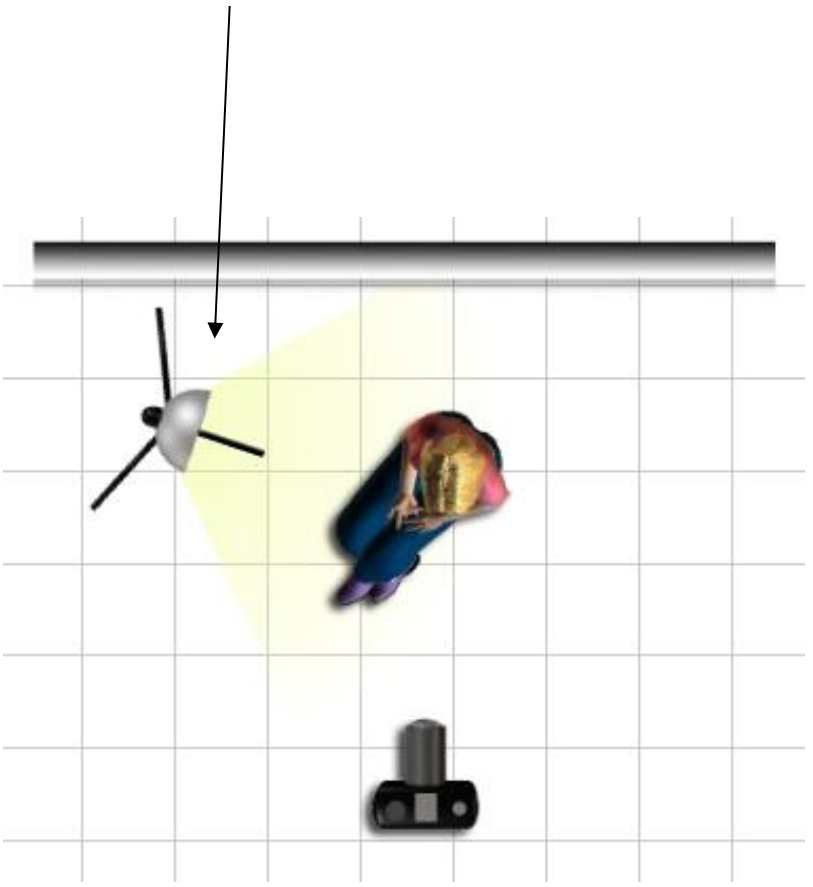
David Sims



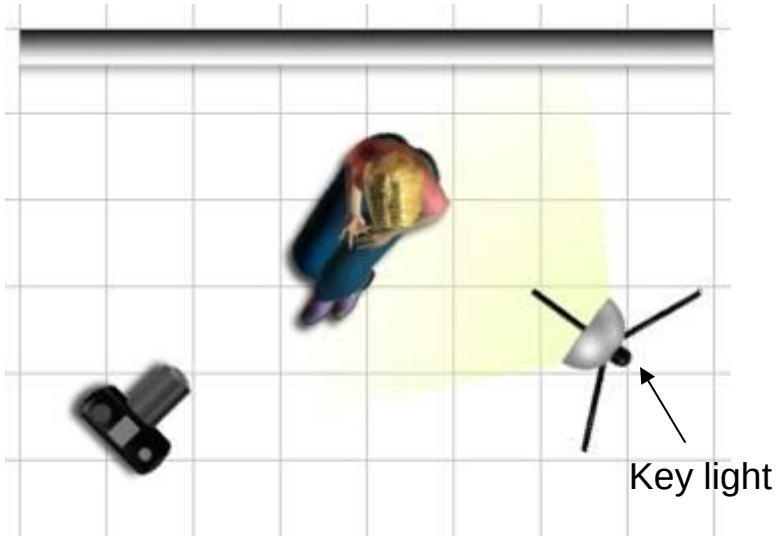
David Bailey

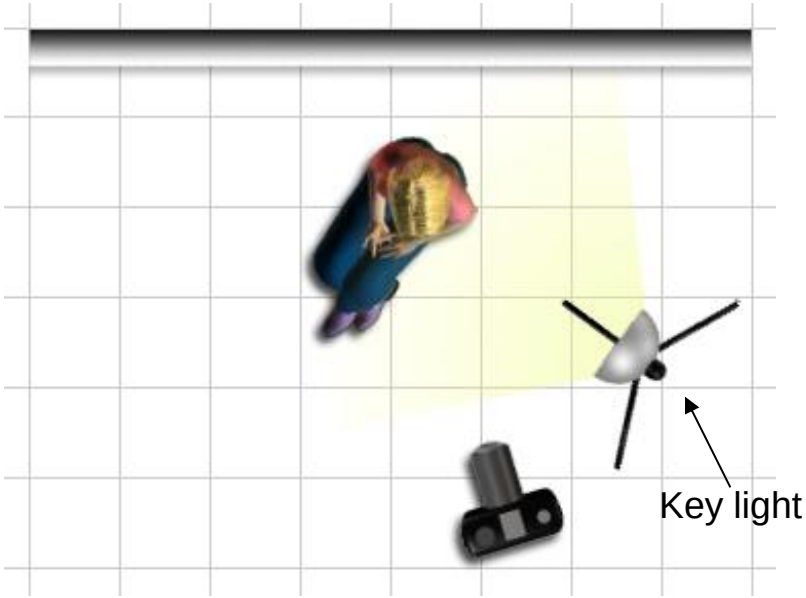
Rankin

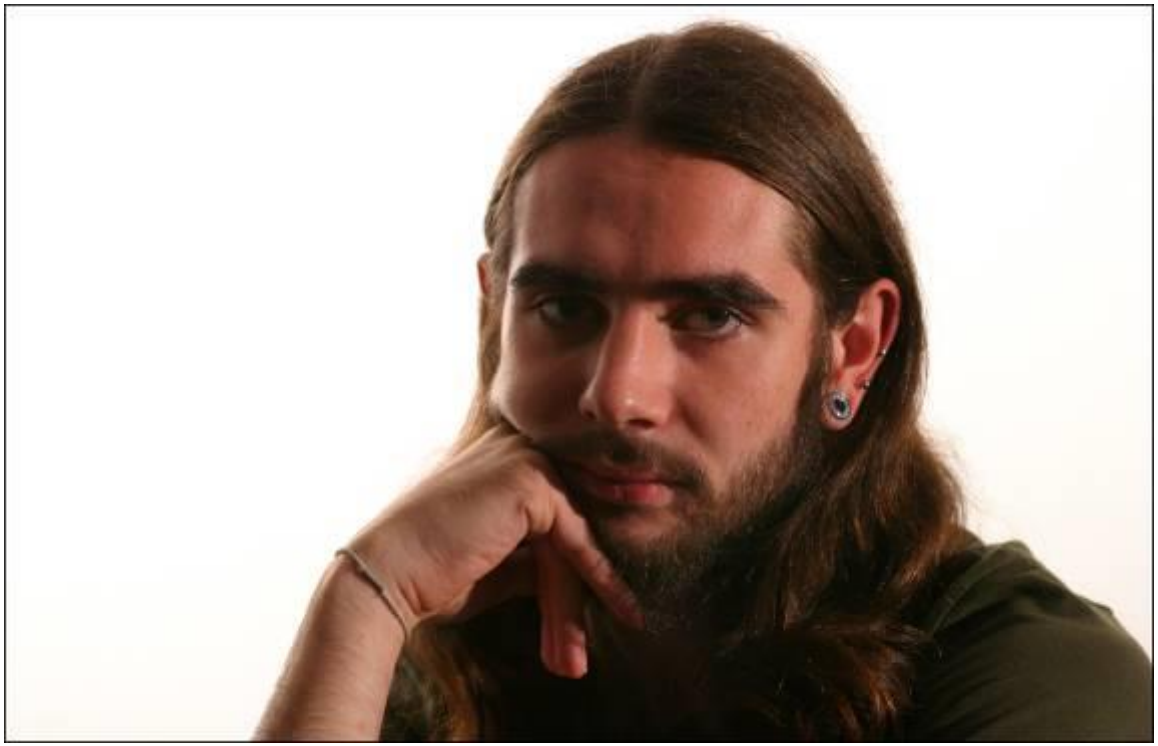
Chiaroscuro using one key light



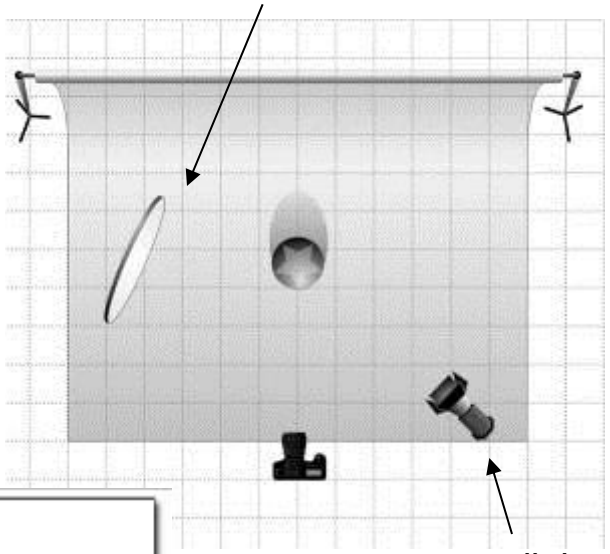
Chiaroscuro..cont

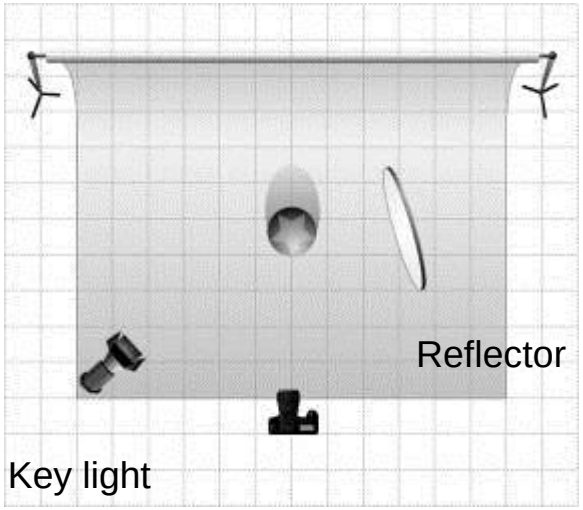


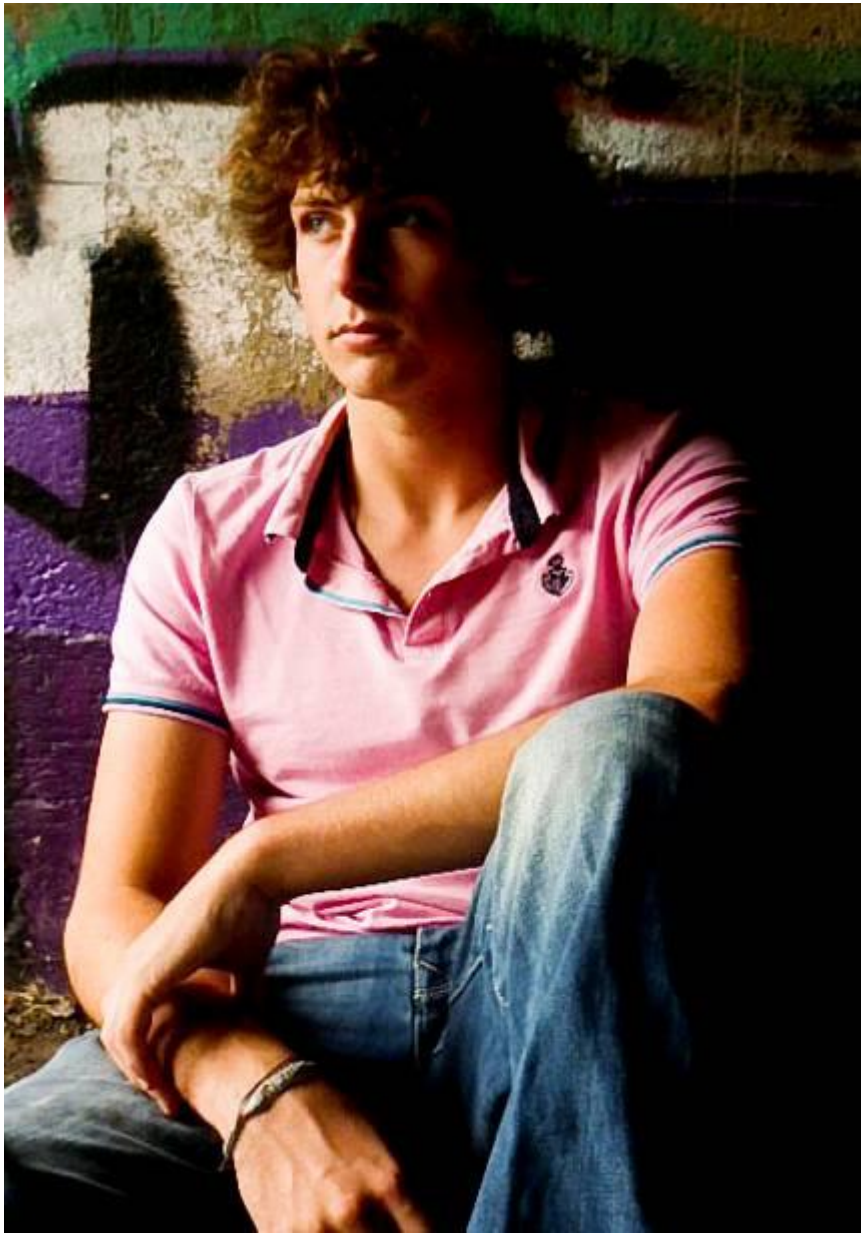




Using one main light and a reflector that reflects light from the key light

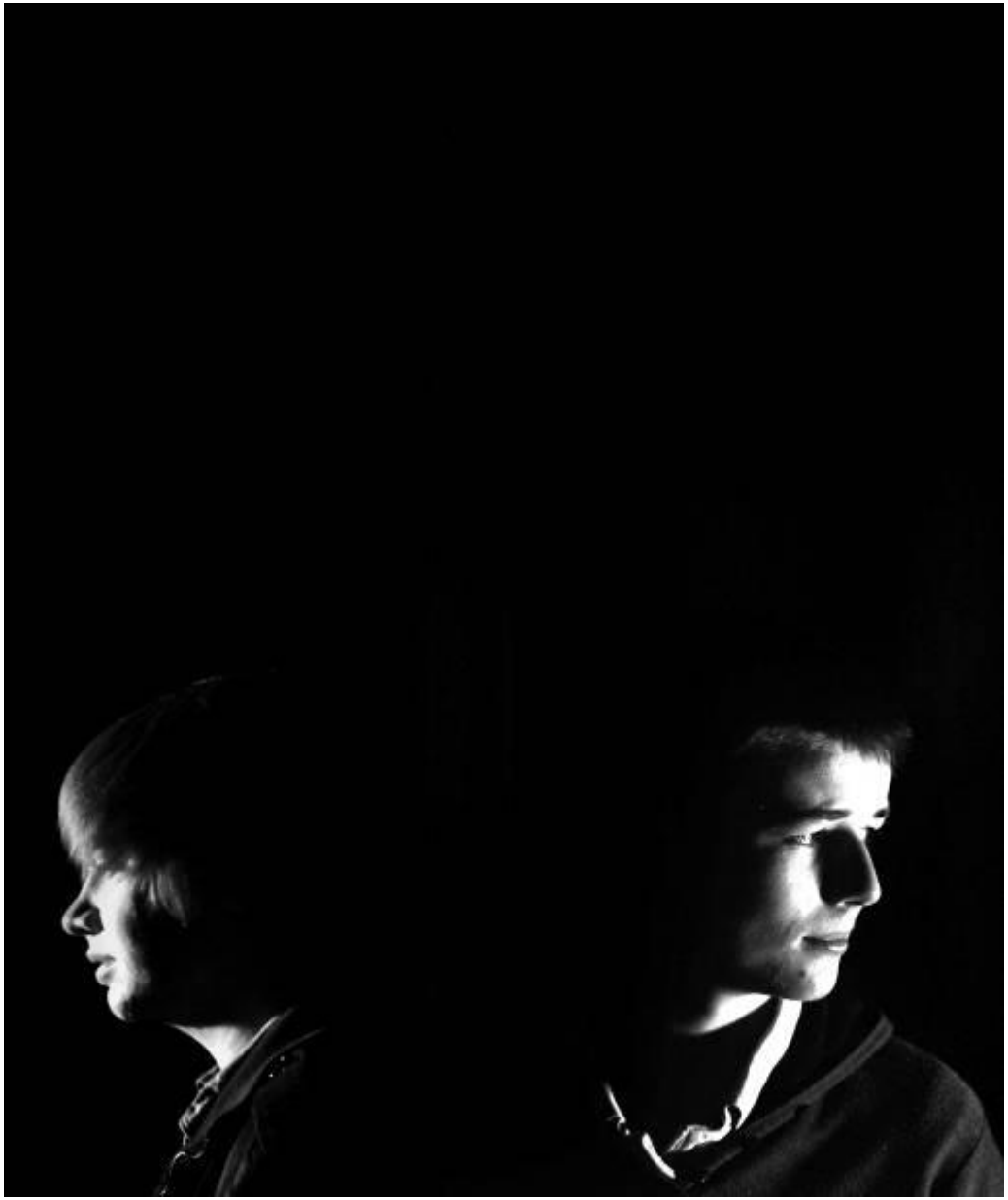




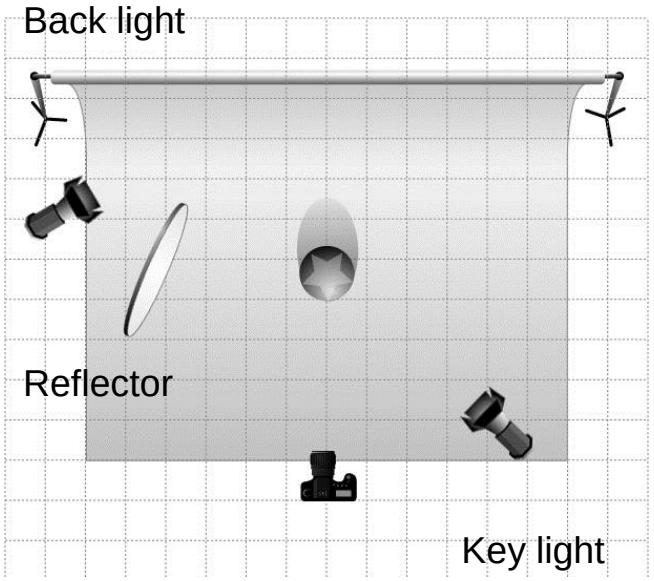


Chiaroscuro lighting

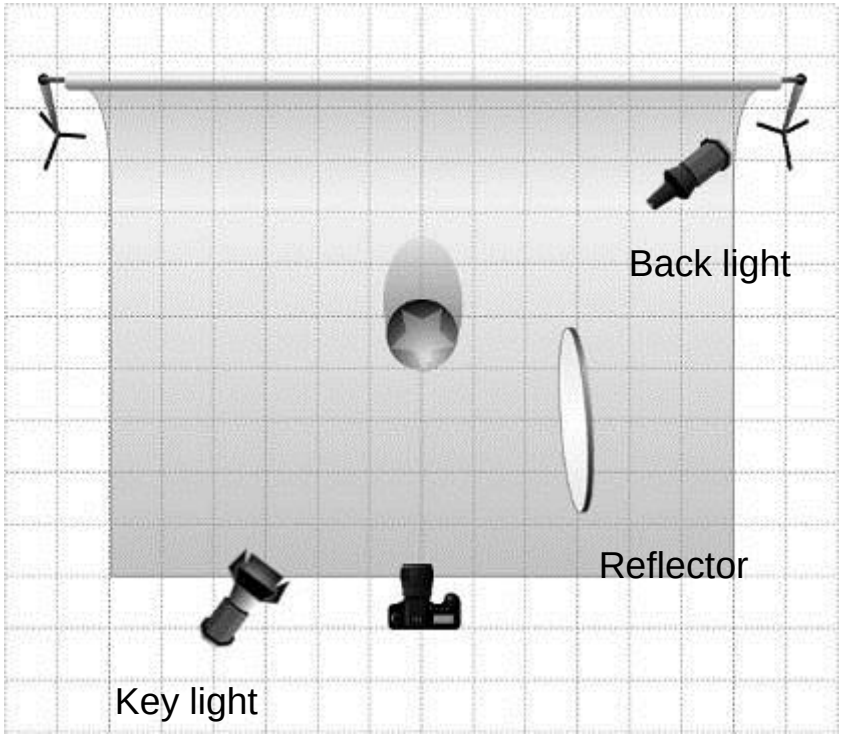

Psychology A2

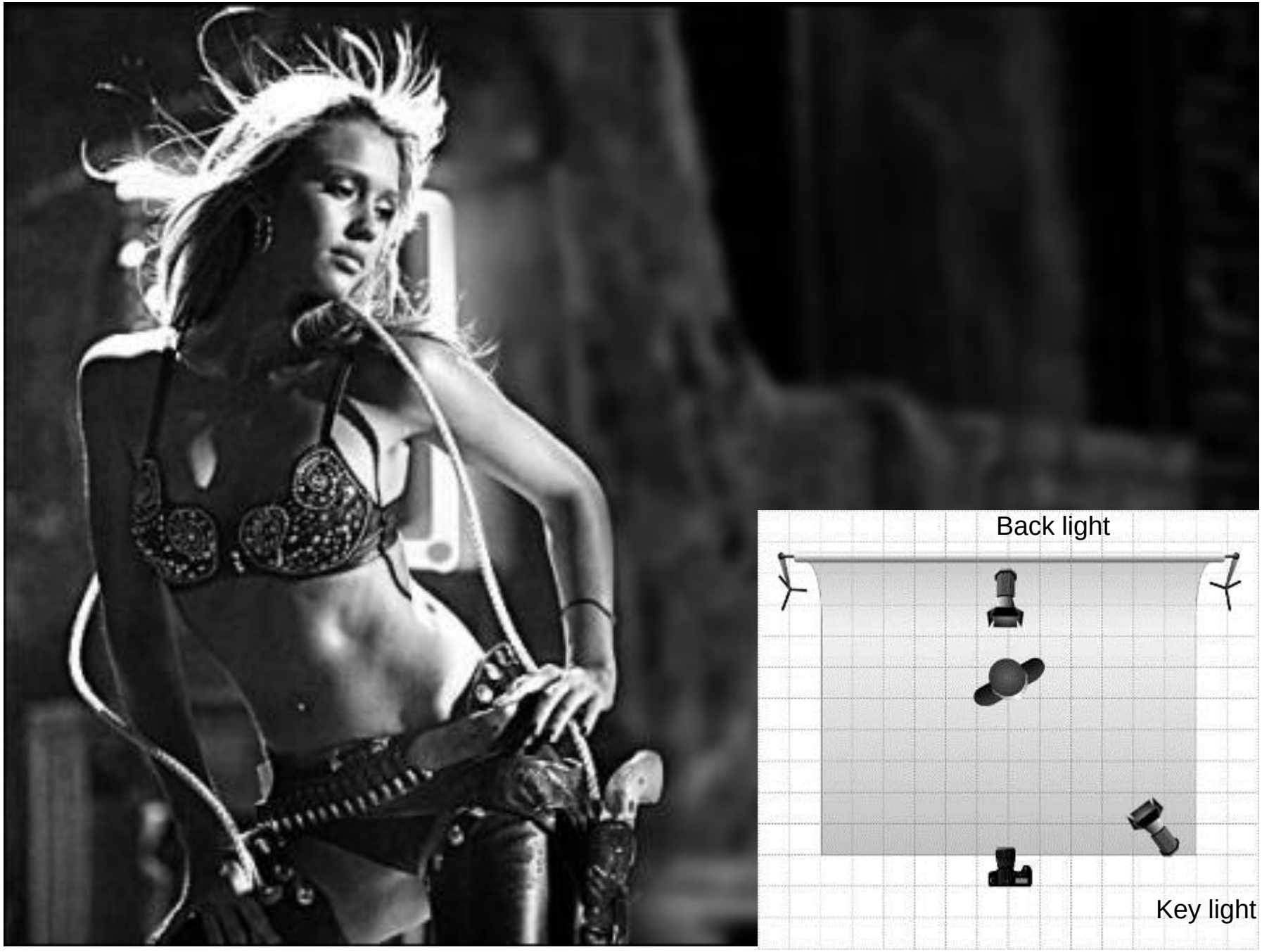


Two lights + one reflector



Two lights + one reflector

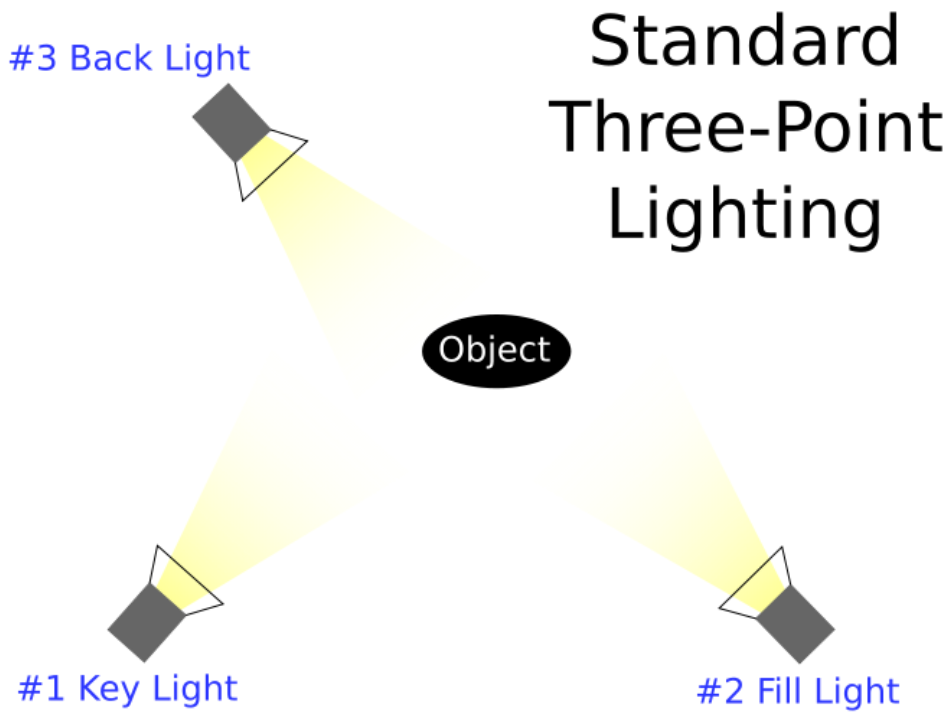



Back light
Key light

Three-point lighting

The Three Point Lighting Technique is a standard method for continuous lights used in visual media such as video, film, still photography and computer-generated imagery. It is a simple but versatile system which forms the basis of most lighting. Once you understand three point lighting you are well on the way to begin to experiment and be creative with different lighting set-ups

The technique uses three lights called the key light, fill light and back light. Naturally you will need three lights to utilise the technique fully, but other creative results can be achieved and the principles are still important even if you only use one or two light. As a rule: If you only have one light it becomes the key. If you have two lights, one is key and the other is either the fill or the back light

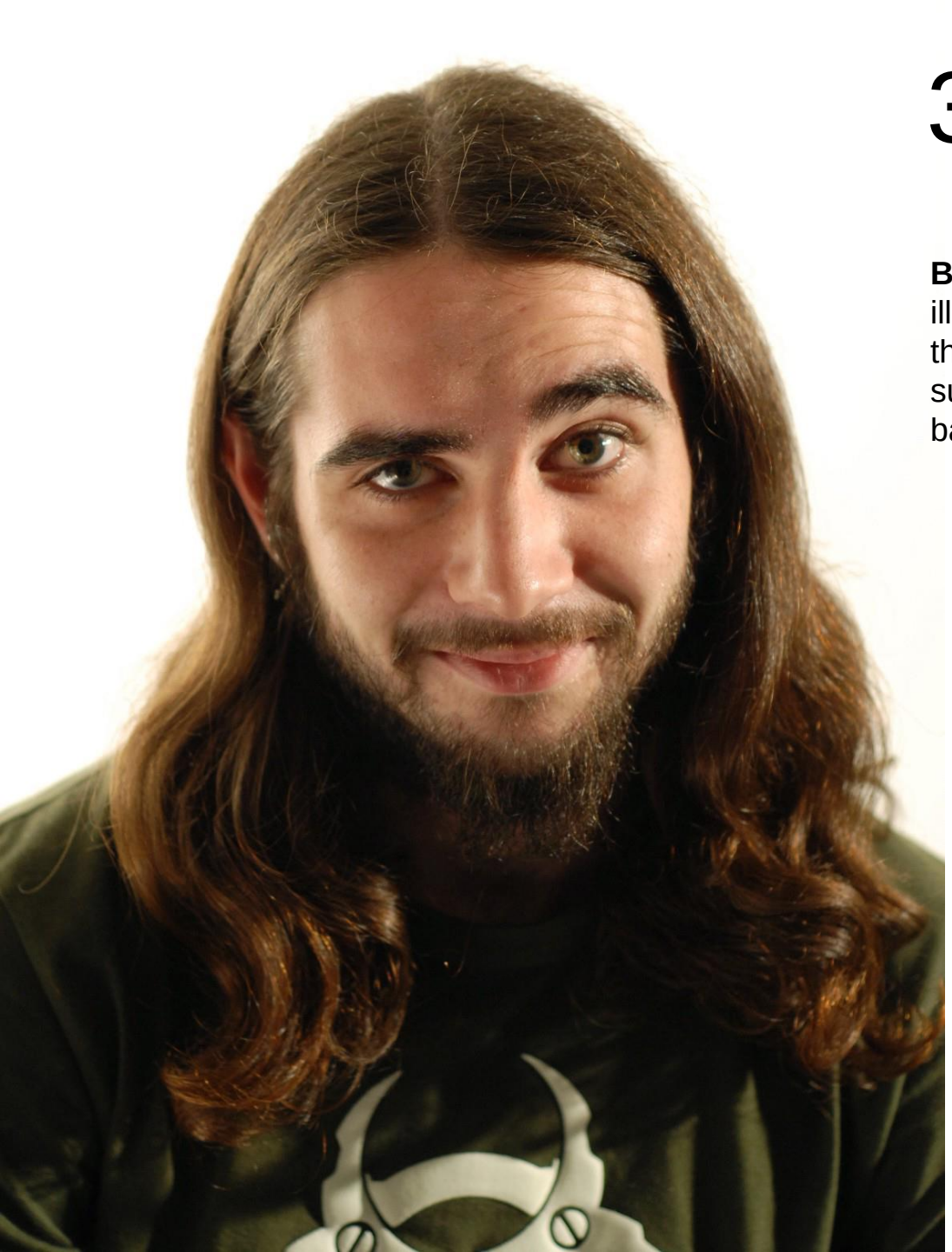


3-point lighting..cont

Key Light
This is the main light. It is usually the strongest and has the most influence on the look of the subject. It is placed to one side of the camera/ subject at a 30-45 degree angle, so that this side is well lit and the other side has a shadow

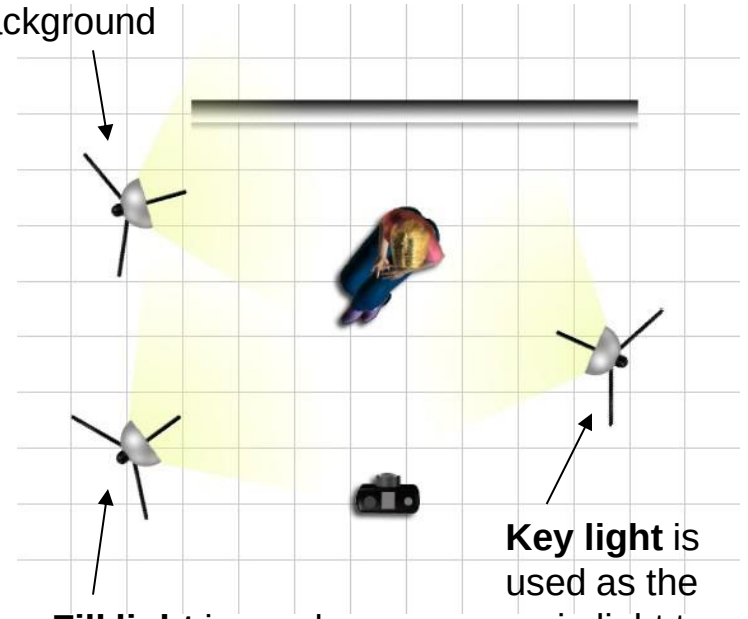
Fill Light
This is the secondary light and is placed on the opposite side of the key light. It is used to fill the shadows created by the key. The fill will usually be softer and less bright than the key. To achieve this, you could move the light further away or turn the light slightly away from the subject. You can also diffuse the light by attaching a kind of tracing paper to the barn doors of the redhead, or bounce the light onto a reflector which will reflect a softer light back onto the subject. Fill light controls the mood or feel of a picture

Back Light
The back light is placed behind the subject and lights it from the rear. Rather than providing direct light (like the key and fill), its purpose is to provide definition and subtle highlights around the subject's outlines. This helps separate the subject from the background and provide a three-dimensional look. As a variation you can also point the back light to the background which will make it very bright and thereby make the subject stand out.



3-point lighting

Back light here is used to illuminate background, rather than the back of the head, to make subject stand out from background



Fill light is used to add a softer light to the shadows created by the key light

Key light is used as the main light to one side of the face

Using Coloured Gels

Coloured gels that are attached to the “red-head” lights can radically alter the feel and temperature of the studio and its lighting to suit the subject.

Flash lighting

Photographic flash is nothing more than a brief, intense flash of light used by photographers to illuminate a subject. It is normally synchronized so that it fires during the brief period of time that the camera shutter is open. There are two very different types of flash, the type that fits onto a camera and the type that's used for studio lighting.

On-camera flash units are clever, and if they're dedicated to the camera they can communicate with it, focusing the camera even in the dark, setting themselves to the camera ISO setting, setting the zoom to suit the camera lens, calculating the exposure adjusting the power output accordingly.

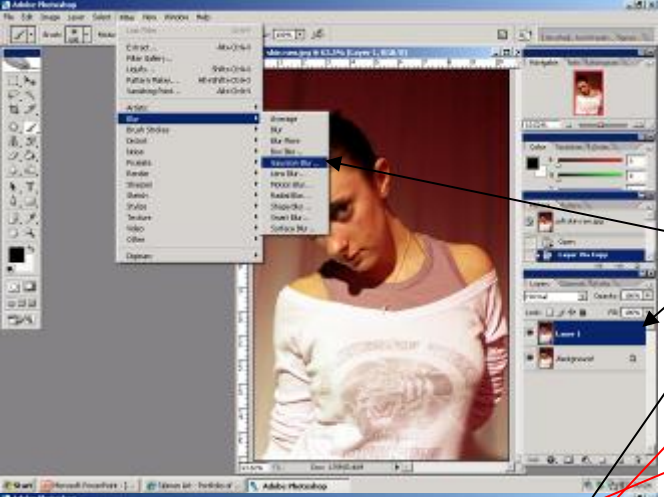
Studio flash units are dumb, and don't have any of these features - but they're far easier to use in the studio, generally have far more power and can be used with modifiers such as a softbox that will spread the light evenly.

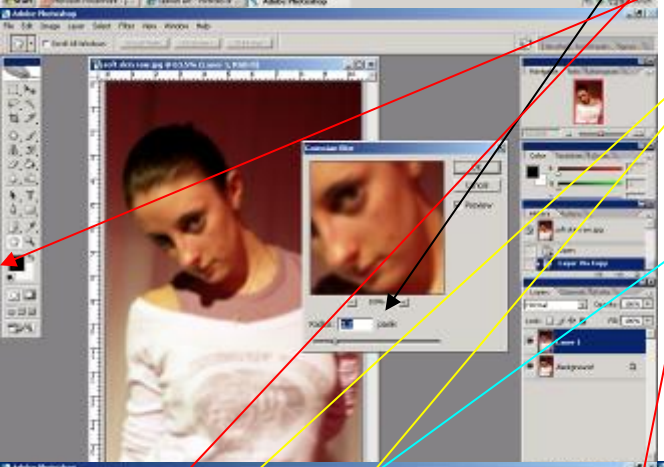
Studio flash

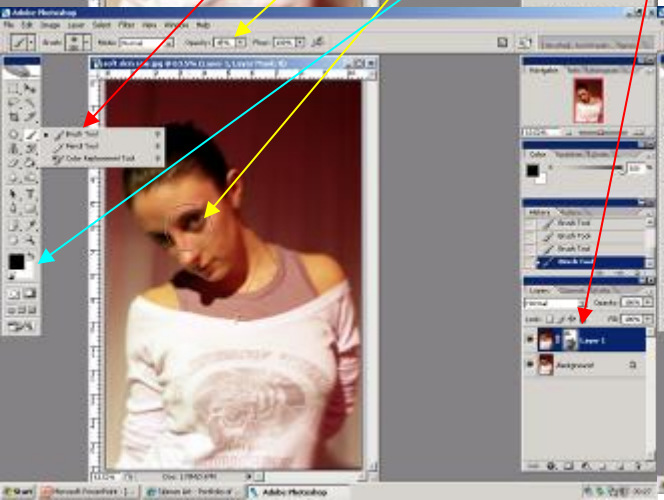
Studio Flash

Smooth Skin

Smooth skin







1. Make a *Duplicate Layer* of the *Background Layer*.(Ctrl L)
2. With the new layer copy apply a *Gaussian Blur* filter around 3-4 pixels. (Filter>Blur>Gaussian Blur)
3. Add a *Layers Mask* to the blurred layer and select *Brush Tool*. Make sure that black is selected as foreground colour and white as background colour
4. Adjust *Opacity* to around 40-50% and erase back the models hair, eyes, mouth and body to the sharp layer underneath.
5 If you need to resize brush use **{ }** on key board
6. If you make a mistake swap foreground and background colour around to white as foreground, black as background. Use **X** on key board.
7. To improve skin use *Patch Tool* to retouch blemishes
8. To improve white in eyes and colour on lips use *Brush Tool* with desired colour selected. Remember to reduce opacity.